Operator’s service manual

VIMEK 608.2

Revision A

Head Office
Lidvägen 11
SE-922 31 Vindeln
Sweden

Tel.: +46(0)933-135 15
Fax: +46(0)933-710 56
www.vimek.se

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Maintenance

Safety

Observe all safety provisions in the machine's instruction manual.
Particularly important information in this service manual is marked with the following symbols:

Risk of personal injury or damage to property

Immediately stop any work

Important information

General

In order for the machine to function problem-free over a long lifespan, the service and maintenance must be carried out according to the instructions in this service manual.
The machine must be regularly lubricated according to the chapter "Maintenance Schedule".

Difficult circumstances can necessitate a shorter service interval.

Be observant for any wear and tear, and for any situations that could lead to machine damage.

Hydraulic components are sensitive to contamination.
Observe strict cleanliness when servicing hydraulic components.

Clean any leaks immediately, to avoid damage to the surroundings.
Spent oil, coolant, battery fluid, etc must be taken to the nearest recycling/deposit centre.
Use environmentally-friendly diesel.

Always turn off the engine during all service and maintenance work on the machine.

Ensure that the motor cannot, in any circumstances, be accidentally turned on again.

Secure machine parts during maintenance - risk of serious crushing injury

Ensure that the crane and the machine are situated in a position where no parts of the crane or machine can move - risk of serious personal injury.

Faults that are discovered must be resolved before continued driving, if there is a risk of personal injury or damage to property!

If in doubt of the appropriate action for daily inspection, damage or larger repairs, contact your VIMEK dealer or service organisation.

Daily inspection

Inspect the machine and crane daily in respect of safety and function.
Daily inspection, lubrication and simple repairs can be carried out by the driver.
Pay particular attention to:

- Noticeable defects or changes to the outside of the machine, e.g. cracks or damage in supporting parts.
- Leakage from the hydraulic system, damage to hoses or cables.
- Leakage from the engine.

In dusty situations, the air filter, cab filter and cooler filter must be checked daily. See section 6.4–6.6

If the diesel warmer is used, the area around the warmer's exhaust gas system must be cleaned daily. Fire risk. See section 13.1

Check the following points daily:

Oils 5.1–5.2
Brake system 7.1–7.3
Hydraulics 11.1
Safety equipment 12.1–12.2
Diesel heater 13.1

Tightening torque

Tightening torque in Nm

		Resistance class			
		4.6	**8.8**	**10.9**	**12.9**
Dimensions	**M6**	3,7	9.8	14	17
	M8	8,9	24	33	40
	M10	17	47	65	79
	M12	30	81	114	136
	M14	48	128	181	217
	M16	74	197	277	333
	M18	103	275	386	463
	M20	144	385	541	649
	M24	249	665	935	1120

Welding

Welding on the machine during warranty period must be done according to VIMEK's instructions

When welding the machine or crane, the following measures must be taken:

- Disconnect the battery's + terminal
- Ensure that there is functioning fire fighting equipment available.
- Clean sufficiently around the welding area so as to eliminate the risk of fire.
- Connect the earthing cable as close to the welding location as possible.
- Disconnect steering system
- Disconnect sprinkler system

For reparatory welding of the drive belt and chains, see separate manual.

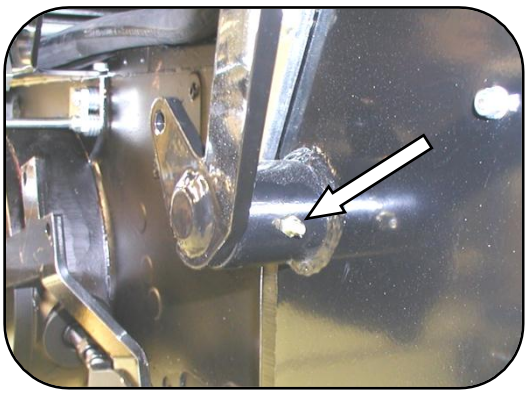
1 Lubrication points

As lubricant, we recommend a grease designed for slide bearings in work machines.
The grease must be suitable for high pressure, impact loading and must maintain its lubrication capacities in temperatures from -25°C to +50°C.
Use a lithium grease fortified with EP additive.
Take the load off the cables before lubricating.
Use 2-3 pumps in each grease nipple.
If it is difficult to insert the grease, it can help to move the cable backwards and forwards.

Always replace sealed or broken grease nipples.

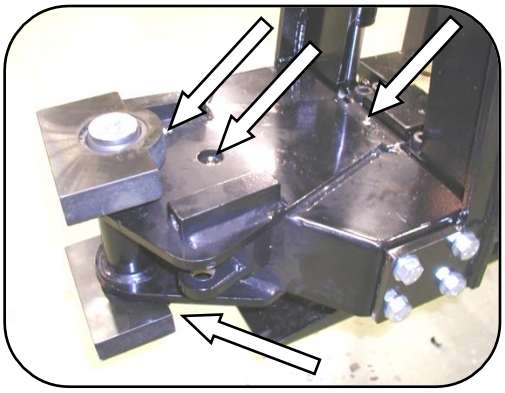
1.1 Brake mechanism

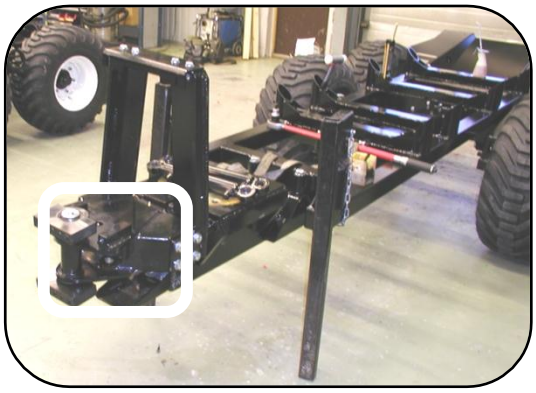
- 1 lubrication point.



1.2 Centre link

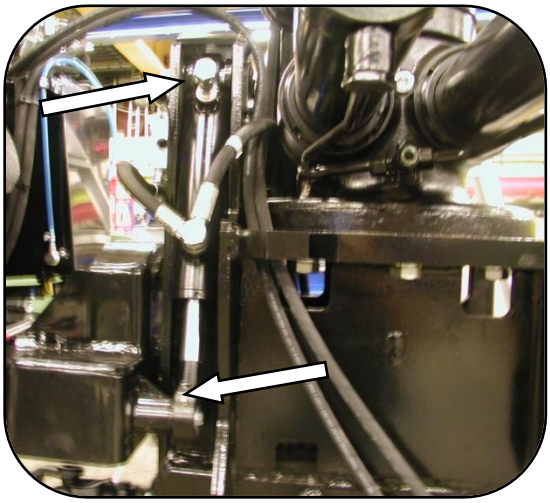
- 4 lubrication points





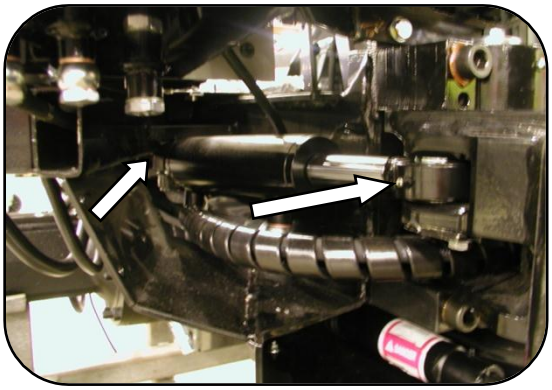
1.3 Stabilisation cylinder

- 2+2 lubrication points



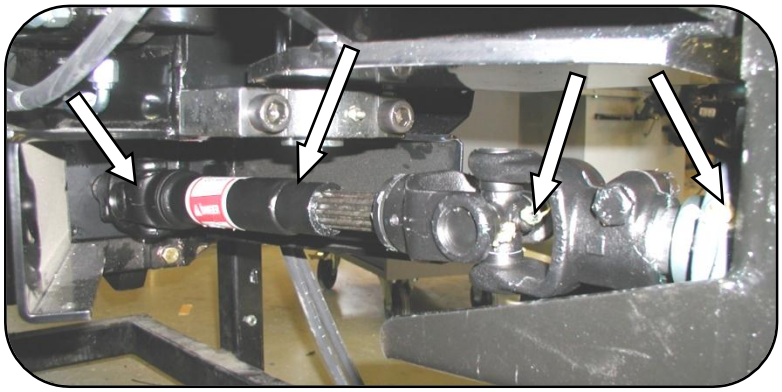
1.4 Steering cylinder

- 2+2 lubrication points



1.5 Transmission shaft

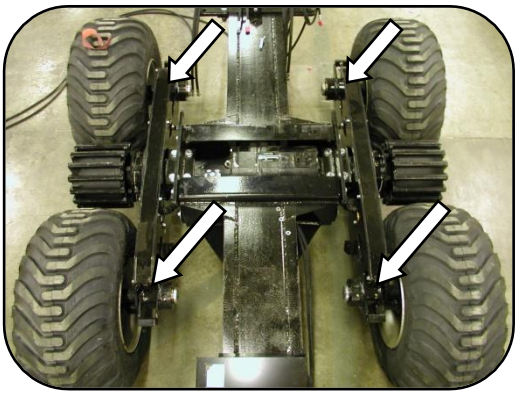
- 6 lubrication points



1.6 Mechanism, drive rollers

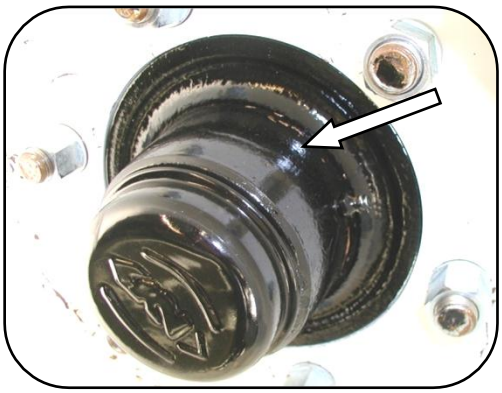
Remove the protective plate above the bogie housing when lubricating the cylinder's lead bearings. Lubricate the lead bearings in the cylinder every 100 hours of operation and the bushings in the hub every 25th hour of operation

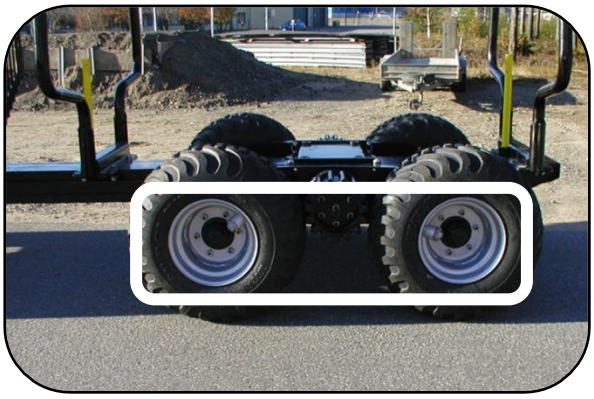
- 4 lubrication points (4x).



1.7 Wheel bearings, trailer section

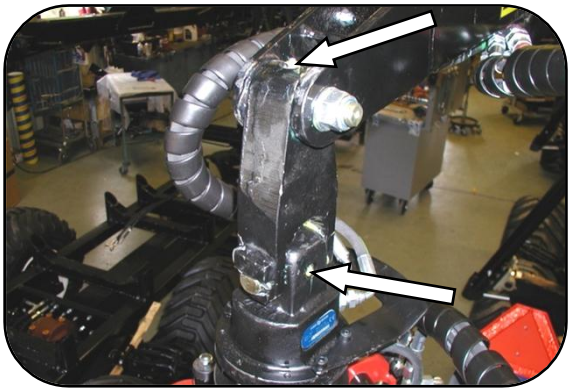
- 2+2 lubrication points, 2-3 pumps/nipple.





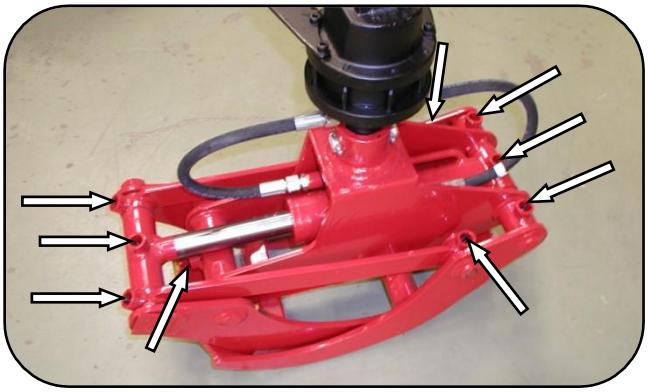
1.8 Rotator/Link

- 2 lubrication points



1.9 Grip (extra option)

- 9 lubrication points

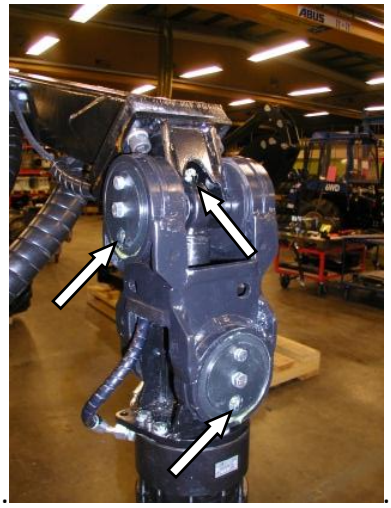


1.10 Crane

See separate manual.

1.11 Break Link

- 6 lubrication points



2 Bolted joint

See section "Tightening torque" for the correct torque.

2.1 Wheels, cab section

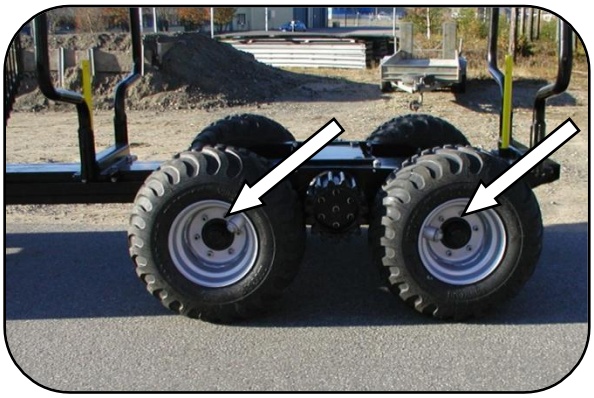
Check:

- 4 pcs Wheel bolts (2x).

2.2 Wheel, trailer section

Check:

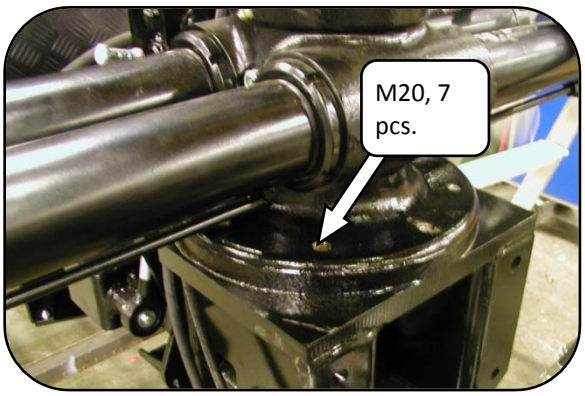
- 6 pcs Wheel bolts (4x).



2.3 Crane foot

Draw 90% of the recommended tightening torque to avoid tensing the bolt

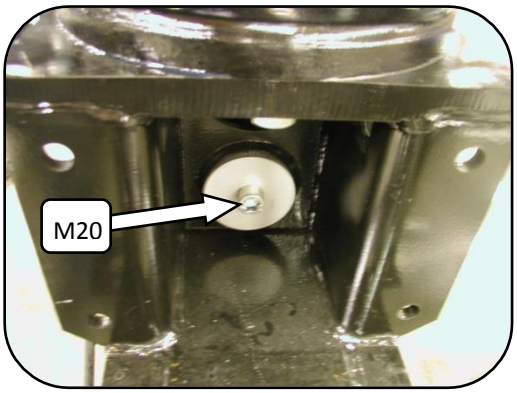
- 7 pcs. M20
- 1 pcs. M16

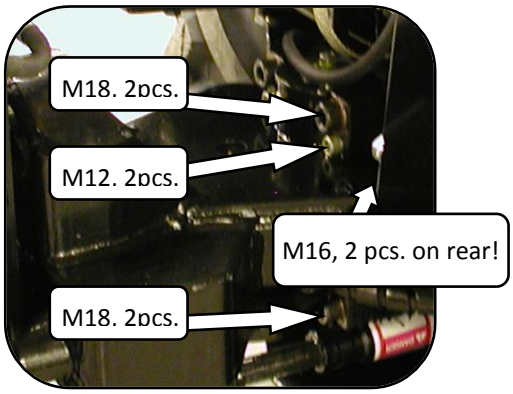


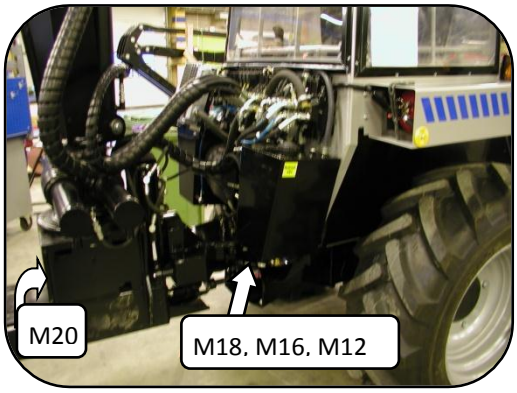
2.4 Centre link

Draw 90% of the recommended tightening torque to avoid tensing the bolt

- 1 pc. M20
- 4 pcs. M18
- 2 pcs. M16
- 2 pcs. M12



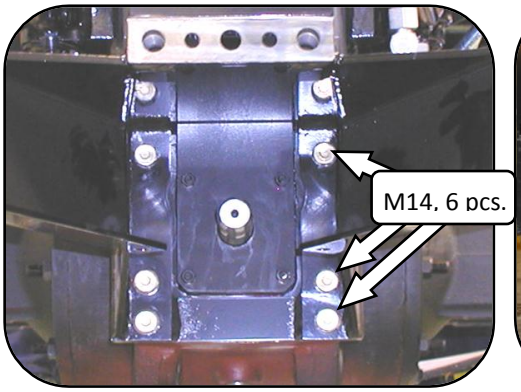


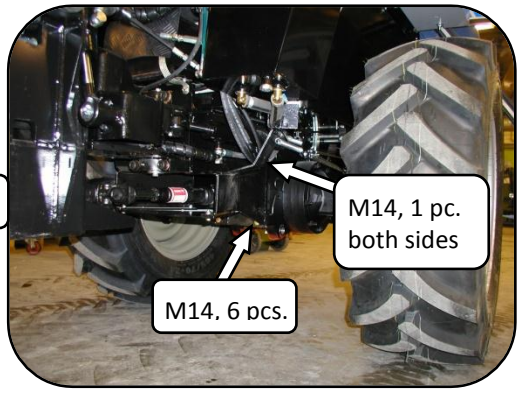


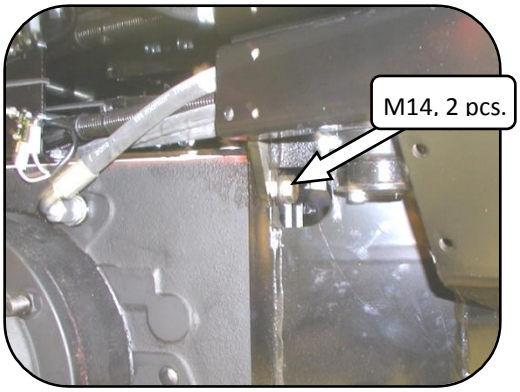
2.5 Rear section gearbox

Draw 90% of the recommended tightening torque to avoid tensing the bolt

- 8pcs. M14



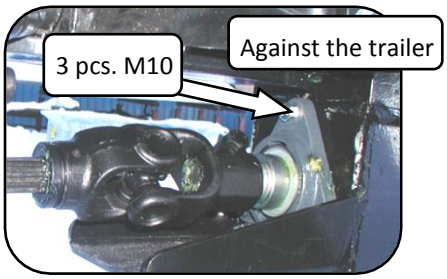




2.6 Driveshaft

Check:

- 2 pcs. M12
- 3 pcs. M10

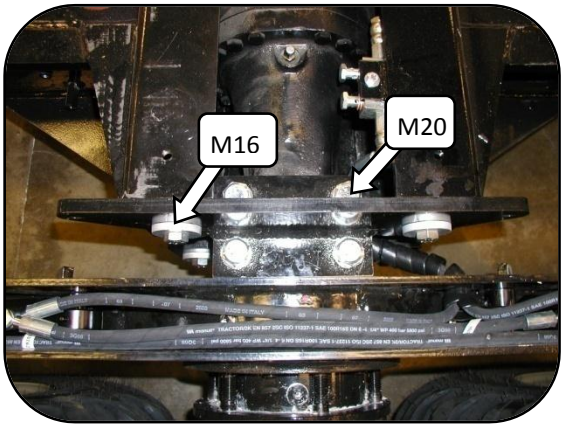


2.7 Trailer section

Remove the protective plate above the corner axle.

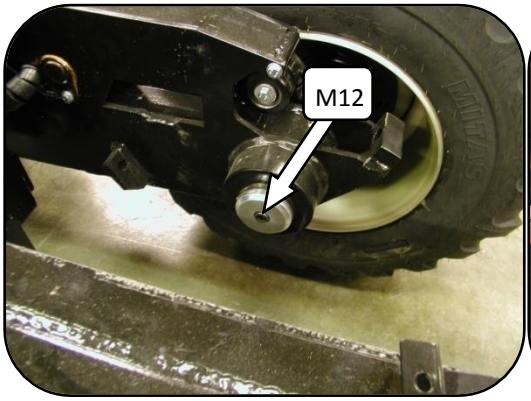
Check:

- 4 pcs. M20 through with lock nuts (2x).
- 4 pcs. M16 (2x).



2.8 Locking wheel axle, trailer section

M12 (4x)

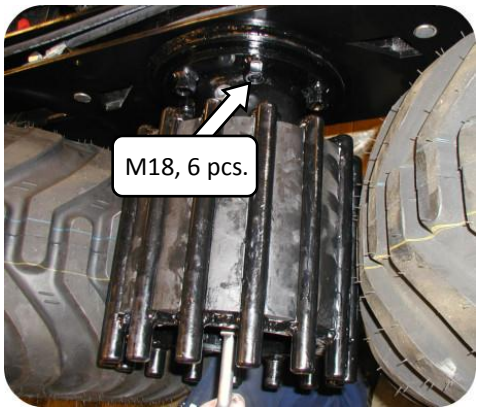


2.9 Drive roller

In order to control draw all M18s, the drive roller must be removed.

Check:

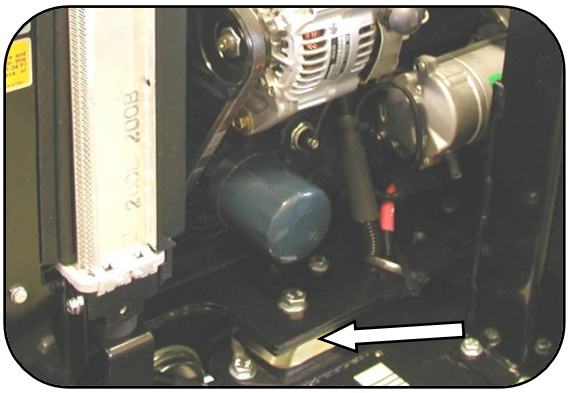
- 7 pcs. M16
- 6 pcs M18

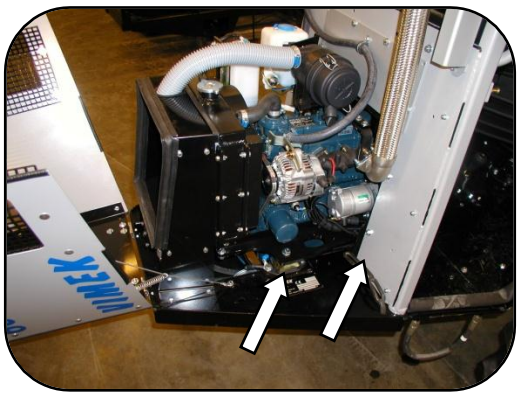


2.10 Engine mounting

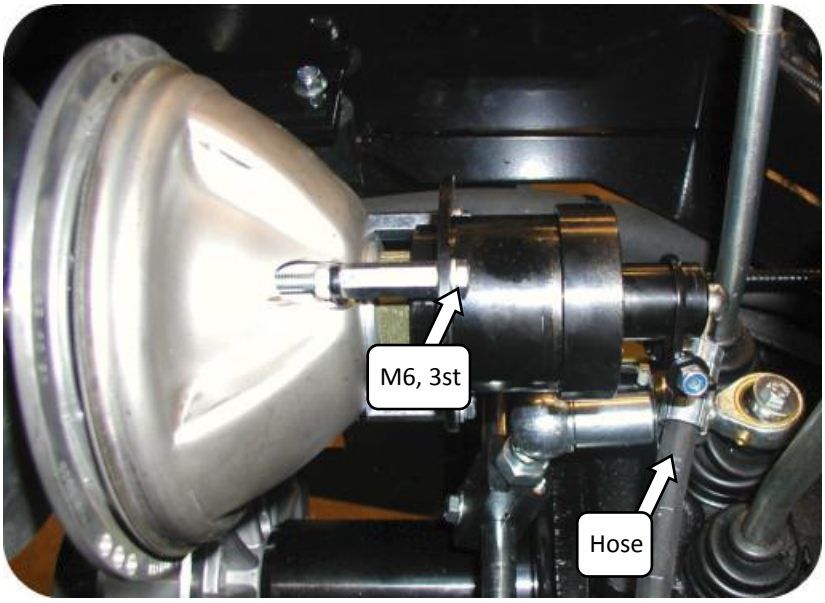
Check:

- 4 pcs. engine cushions. Check for any cracks in the rubber part.
- Bolts for engine mounting.





2.11 Variator



Kontrollera:

- 3 psc M6
- Hose in respect of cracks and leakage. Change when necessary.

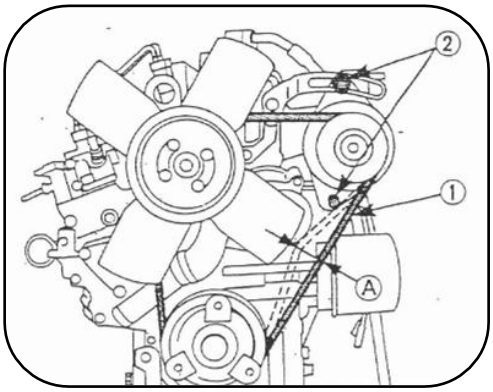
3 Engine

These are only a few selected service points for the engine.
For complete service and maintenance instructions, see the engine's separate manual!

3.1 V belt

Check:

- V belt condition, pos. 1. Change when necessary.
- Tension of V belt. Adjust when necessary.
  Measurement "A" must be 7-9mm at a load of 10kg, see image.
  - Adjustment: Loosen the bolts in accordance with pos. 2 and adjust the V belt tension.
  - Tighten the bolts after adjustment.



3.2 Hoses

Check:

- Diesel and coolant hoses in respect of cracks and leakage. Change when necessary.

3.3 Venting the diesel system

When venting, the diesel level in the tank must be higher than the venting points.
Be aware that diesel can easily be spilled during venting.
Clean up spills immediately!

Never bleed a warm engine.

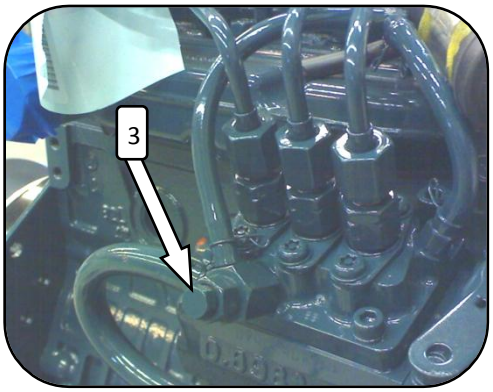
Think about the fire risk!

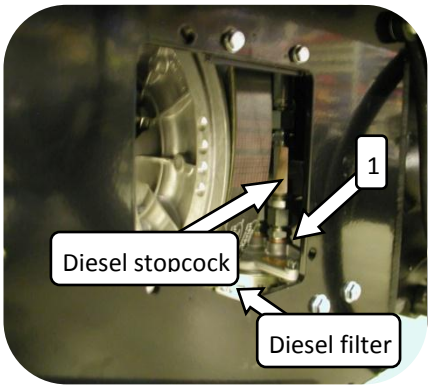
The fuel system must be vented:

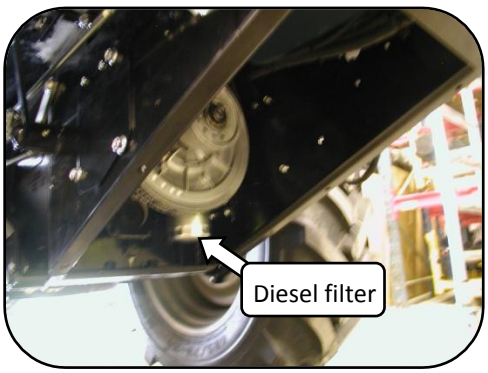
- if the tank is driven dry of diesel
- when the filter or diesel hoses are changed.
- before starting the engine, if the machine has been out of use for a lengthy period.

Venting:

- Fill the diesel tank fully and open the diesel stopcock.
- Open plug "1" in the diesel filter.
- Close plug "1" once only diesel comes out.
- Bleed the diesel pump by opening plug "3".
- Close plug "3" once only diesel comes out.







4 Fluids

4.1 Coolant

Never open the lid to the radiator when the engine is warm. Risk of burns.

If propylene glycol is used, the coolant must be changed at least once per year.

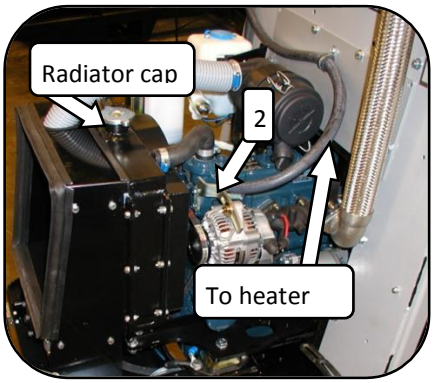
Always use distilled water. Mix the glycol according to the manufacturer's instructions.

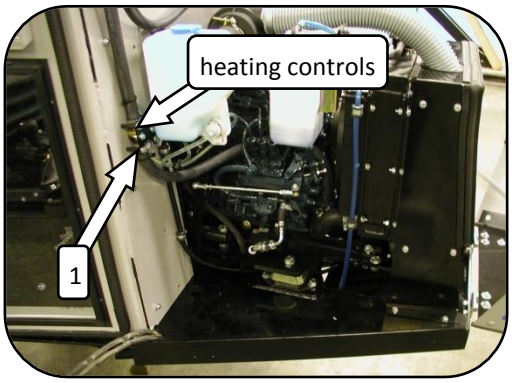
Check:

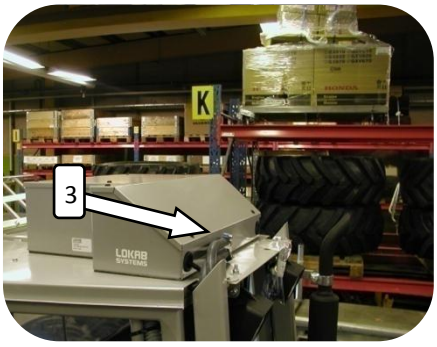
- The liquid level should be up to the lid. Top up as required.
- Cold tolerance when freezing temperatures occur.

Change:

- Close the stopcock to the heating controls (inside the cab) and open the radiator cap.
- Loosen hose end "1". Position it lower than the bottom of the radiator and collect the liquid.
- Loosen hose end "2" and move it close to the heater stopcock.
- Open the heater control stopcock and collect the water.
- Reassemble all the hoses.
- Fill the radiator with new coolant. Close the radiator cap.
- Loosen hose end "3" and fill with coolant until the level reaches the heater. Reassemble the hose.
- Start and run the engine for a few minutes. Check that there are no leaks.
- Check the coolant level. Top up as required.



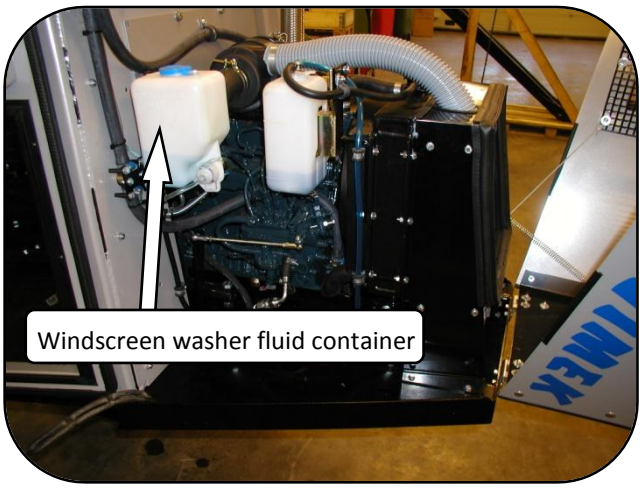




4.2 Windscreen washer fluid

Top up as required.

Mix the correct amount of windscreen washer fluid/water for the outside temperature.



5 Oils

Old oil must always be managed and disposed of in accordance with applicable regulations.
Pay attention to cleanliness to avoid the introduction of dirt particles into the system.

The oils in a warm engine can be very hot. Risk of burns.

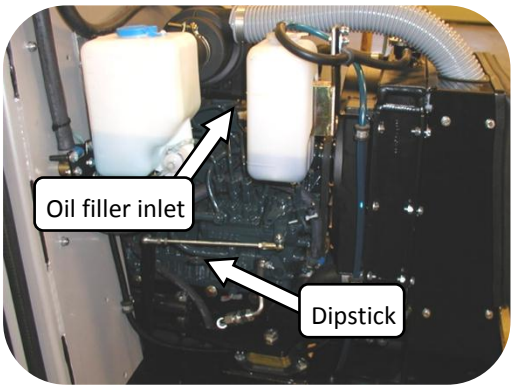
5.1 Engine oil

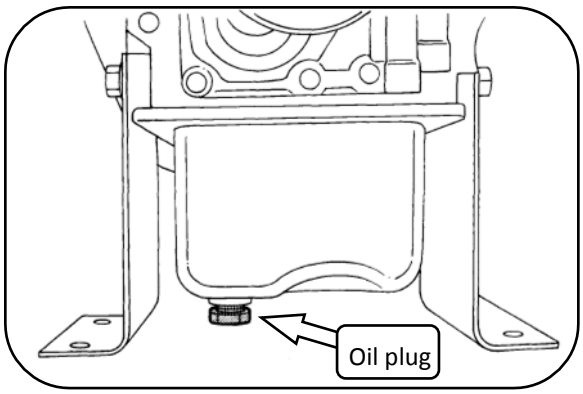
Check:

- Make sure the machine is on a level surface.
- Check the oil level before starting, or at least 5 minutes after stopping.
- Remove the dipstick, dry off any oil and replace.
- Remove the dipstick again and read the oil level on the stick.
- Top up with oil as required. Wait 5 minutes before performing any further checks.

Change:

- A warm engine facilitates emptying the oil.
- Unscrew the oil plug under the oil sump and collect the old oil.
- Change the oil filter (see chapter 6.1)
- Screw the oil plug back in and fill with new oil. See "Technical data" for the correct amount of oil.
- Check that the oil level reaches the upper mark on the dipstick.
- Check that there are no leaks around the oil plug and the filter.





5.2 Hydraulic oil

Carry out continuous oil analysis through your oil supplier, to ensure the condition of the oil. Change when necessary.

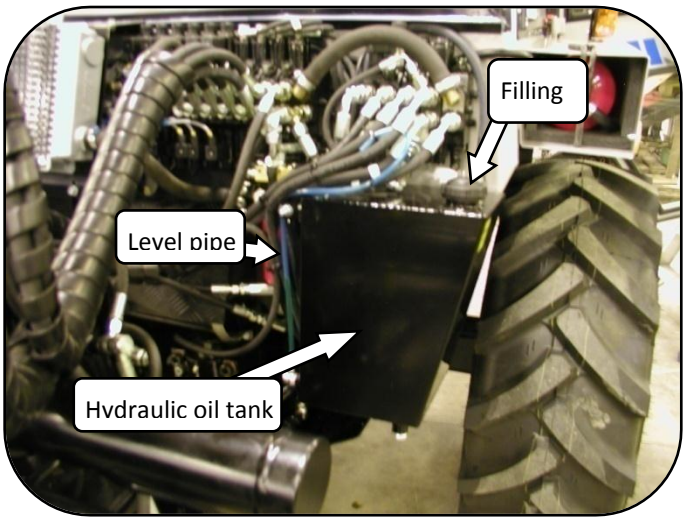
Always fill the oil through a filter.

Check:

- Level pipe on hydraulic oil tank. Top up as required.

Change:

- Unscrew the oil plug under the hydraulic oil tank and collect the old oil.
- Screw the oil plug back in. Fill with new oil. See "Technical data" for the correct amount and type of oil.
- Check the oil level on the level pipe.
- Check that there are no leaks.



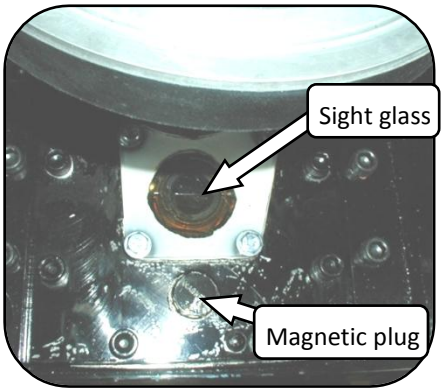
5.3 Gearbox oil

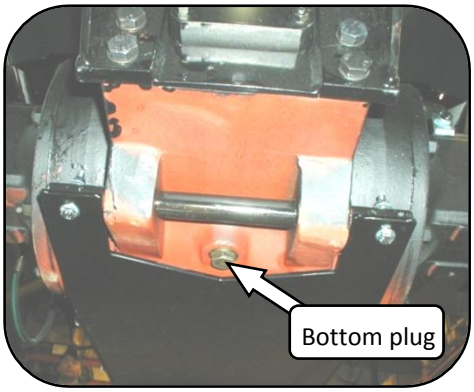
Check:

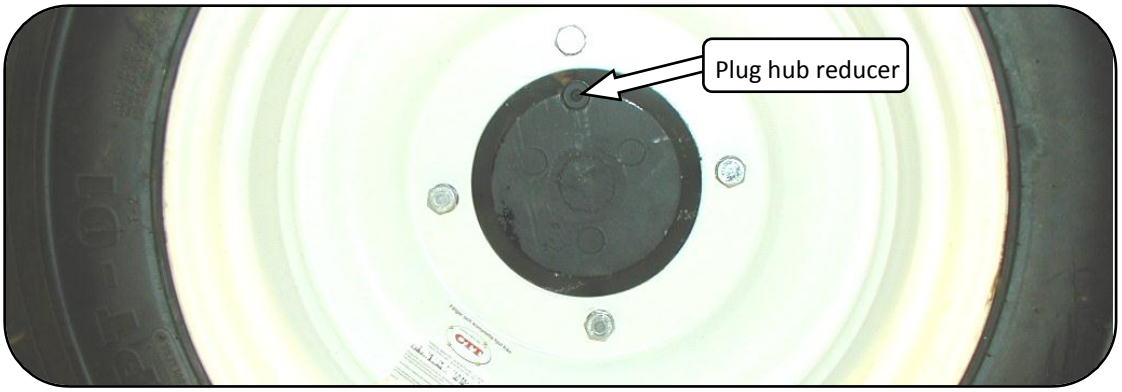
- Make sure the machine is on a level surface.
- Check the oil level in the sight glass on the front of the gearbox, under the secondary variator.
- Fill up as required, see "Change" below.

Change:

- Make sure the machine is on a level surface and with the hub reducers pointing downwards.
- Remove the protective plates from below the engine and gearbox.
- Unscrew the oil plug under the gearbox and plugs on the hub reducers and collect the old oil.
- Unscrew the magnetic plug. Metallic filings on the magnet can indicate gearbox damage. Contact your VIMEK dealer for an assessment.
- Screw back the oil plug under the gearbox and <u>one</u> of the plugs to the hub reducer.
- Turn the hub without the plug so that the drain ends up facing upwards, and fill the new oil through it.
  See "Technical data" for the correct amount and type of oil.
- Check the oil level in the sight glass on the front of the gearbox.
- Check that there are no leaks.







5.4 Drive shaft oil, trailer section

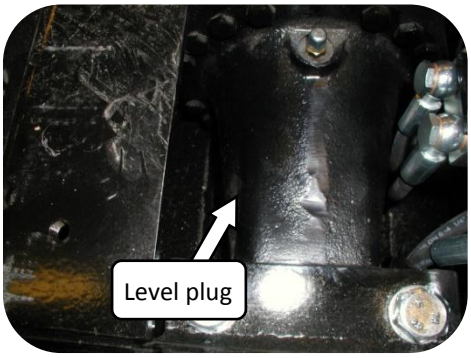
The drive shaft in the trailer has three check points, 2 in the planetary gear housing and 1 in the gear/brake housing.

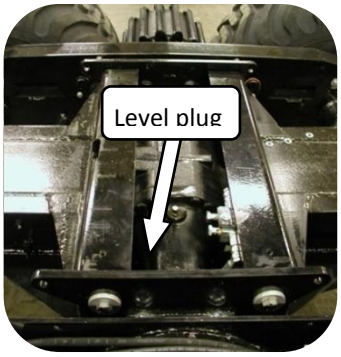
Gear/Brake housing:

When checking and filling with oil in the shaft, the protective plate must be removed.

Check:

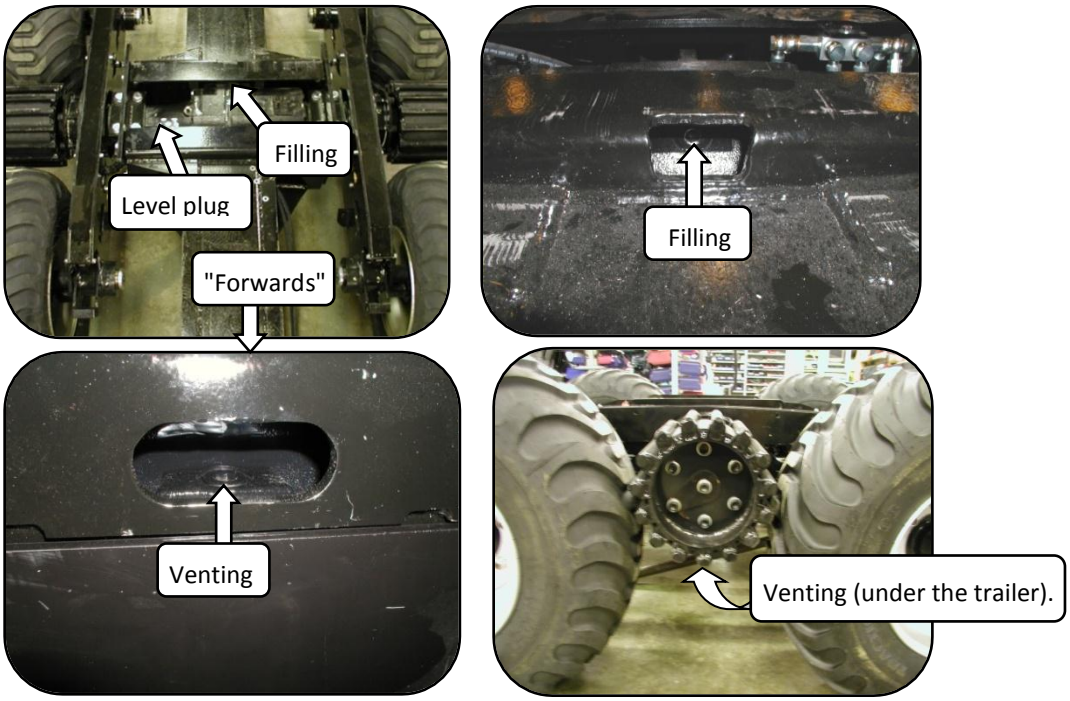
- Loosen the level plug. The oil level should be up to the level plug.
- Top up as required.





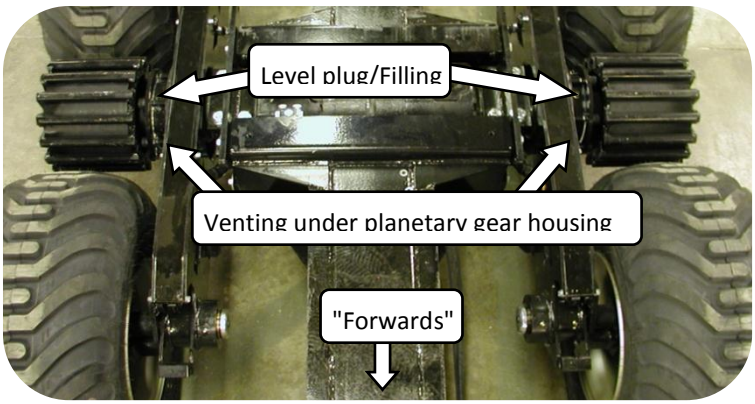
Change:

- Unscrew the drain plug and collect the old oil.
- Screw the oil plug back in.
- Screw off the bleed valve/filling.
- Unscrew the level plug.
- Fill with new oil up to the level plug. See "Technical data" for the correct amount and type of oil.
- Reassemble the plugs.
- Check that there are no leaks.



5.5 Planetary gear housing:

During checking, filling and changing of oil in the planetary gear, it is not necessary to remove the protective plate.



Check:

- Loosen the level plug. The oil level should be up to the level plug.
- Top up as required.

Change:

- Unscrew the drain plug and collect the old oil.
- Screw the oil plug back in.
- Screw off the filling plug.
- Fill with new oil up to the filling plug. See "Technical data" for the correct amount and type of oil.
- Screw back on the filling plug.
- Check that there are no leaks.

6 Filter

Pay attention to cleanliness to avoid the introduction of dirt particles into the system.

6.1 Engine oil filter

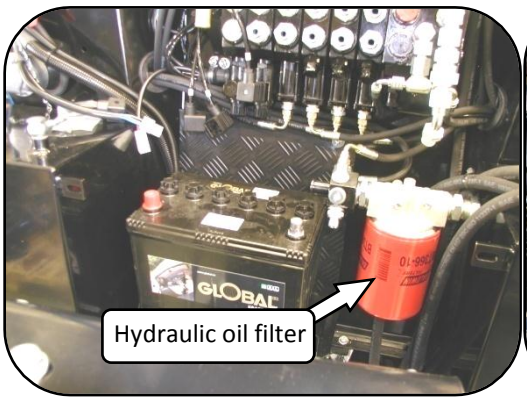
Filter change:

- Loosen the filter with oil filter tongs. Clean up any oil spills.
- Spread oil on the new filter gasket.
- Tighten the new filter by hand. Do not use filter tongs.
- Run the motor for a while.
- Check the oil level. Top up as required.
- Check that there are no oil leaks round the filter.

6.2 Hydraulic oil filter

Filter change:

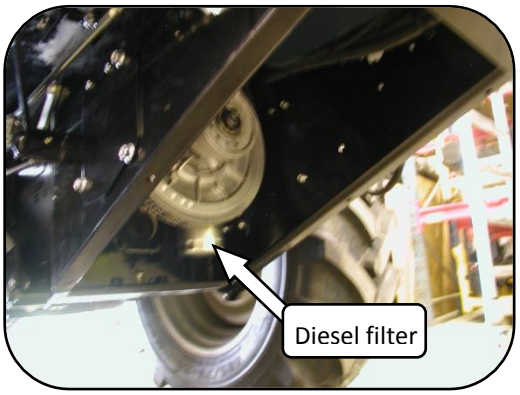
- Remove the cap that protects the valve unit.
- Loosen the filter with oil filter tongs. Clean up any oil spills.
- Spread oil on the new filter gasket.
- Tighten the new filter by hand. Do not use filter tongs.

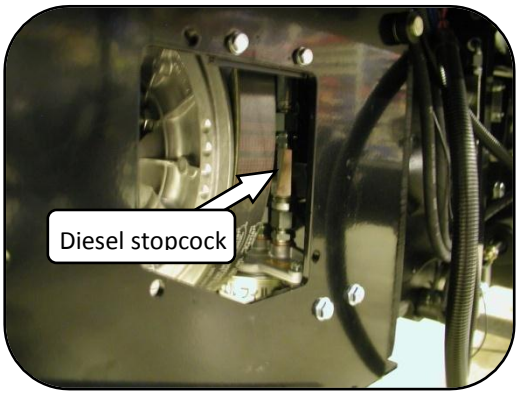


6.3 Diesel filter

Filter change:

- Remove the protective plates.
- Close the diesel filter stopcock.
- Loosen the filter. Pay attention to cleanliness.
- Fit a new filter.
- Vent the diesel system, see section "Venting the diesel system".



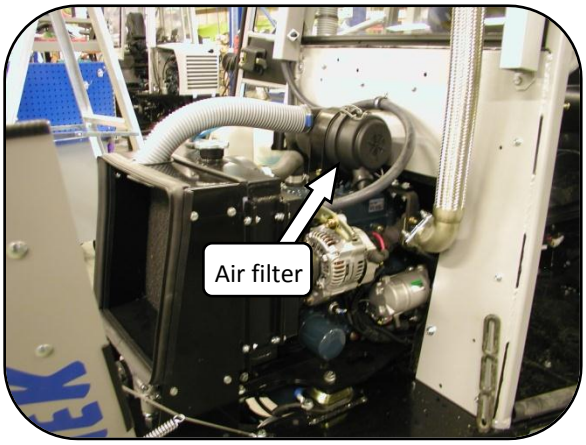


6.4 Air filter

Clean the filter.

Check:

- That there is no damage to the filter. Change when necessary.

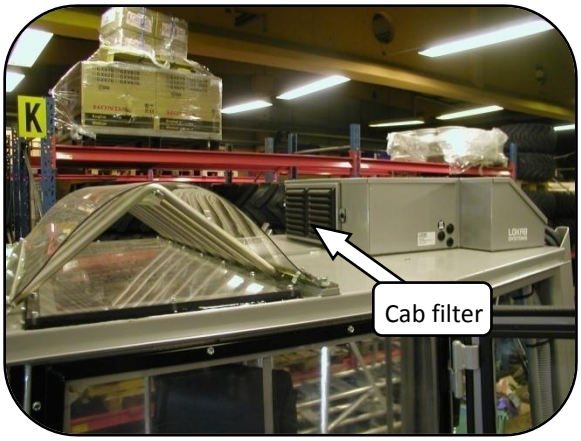


6.5 Cab filter

The filter is placed on the cab ceiling. Clean the filter.

Check:

- That there is no damage to the filter. Change when necessary.

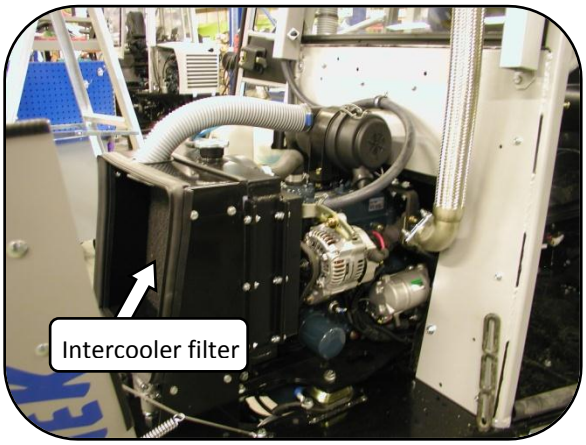


6.6 Intercooler filter

Clean the filter.

Check:

- That there is no damage to the filter. Change when necessary.



7 Brake system

The brakes must be adjusted if they are uneven or feel light.

The brakes must be adjusted on both sides for a more even braking effect.

7.1 Driving brake

Check:

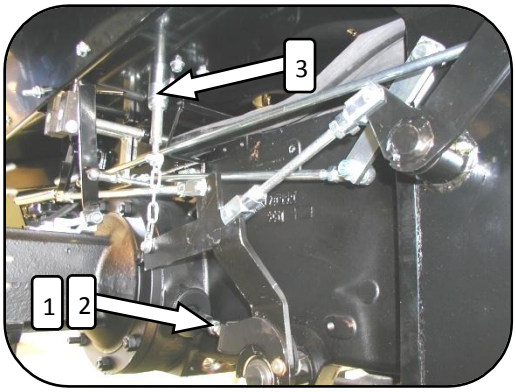
- Brake effect. Adjust when necessary.

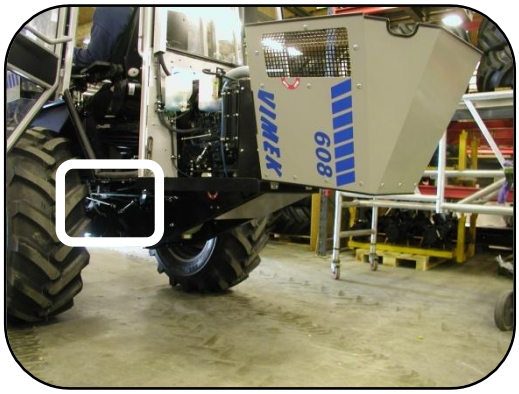
Adjustment (Adjust one side at a time):

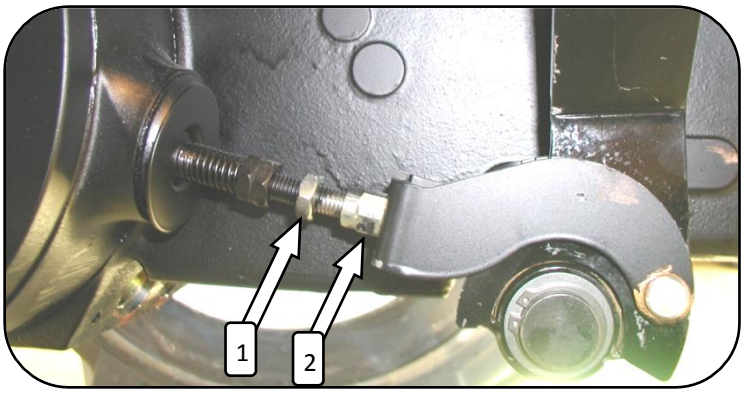
- Lift up the machine so that both front wheels can turn freely.
- Loosen lock nut "1".
- Screw in adjusting screw "2" until the wheel can no longer move. Loosen slightly so that the wheel can turn freely.
- Tighten lock nut "1".

Repeat the above process on the other side.

- Test drive and check the brakes' function and that they engage evenly.







7.2 Parking brake

Check:

- Brake effect. Adjust when necessary.

Adjustment:

- Adjust "3" as required. See image in section 7.1

7.3 Trailer brake

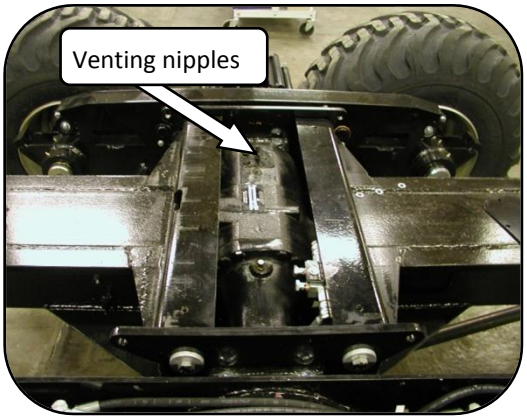
Check:

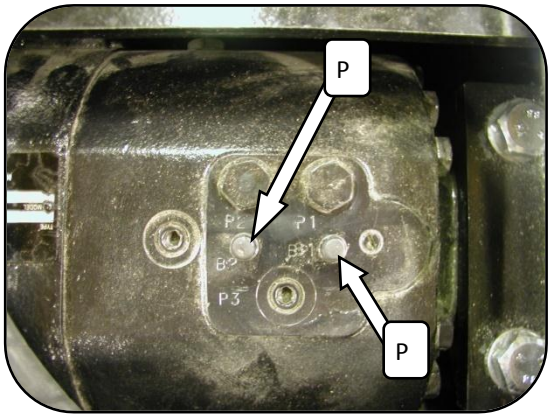
- Brake power. Adjust/vent when necessary.

Venting:

- Put the machine in operation.
- Stop the engine.
- Open venting nipple "P1" a small amount. Close once the air flow stops.
- Open venting nipple "P2" a small amount. Close once the air flow stops.

Nipple "P1" is the parking brake and "P2" is the driving brake.

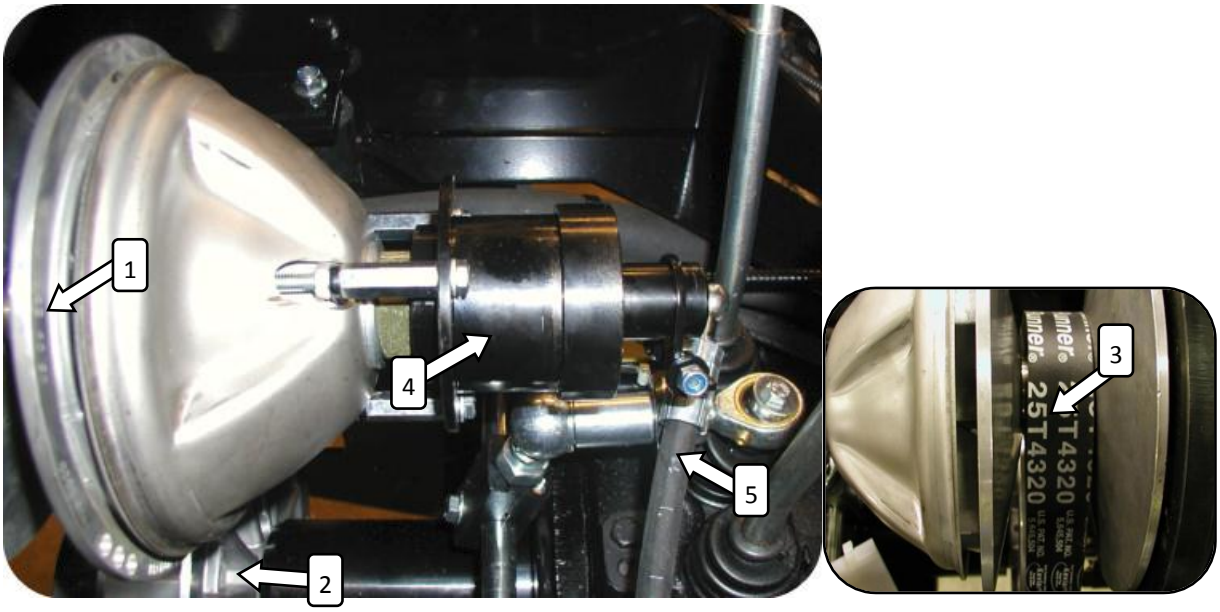




8 Transmission

8.1 Variator

The condition of the variator is essential for the desired operation of the machine. A reduction in draft can be due to the variator.



1. Primary variator
2. Secondary variator
3. Variator belt
4. Cylinder
5. Hose

When undertaking all variator work, ensure that the engine cannot be started. Risk of crushing!

8.2 Variator belt

The width of the variator belt may not be less than 28 mm

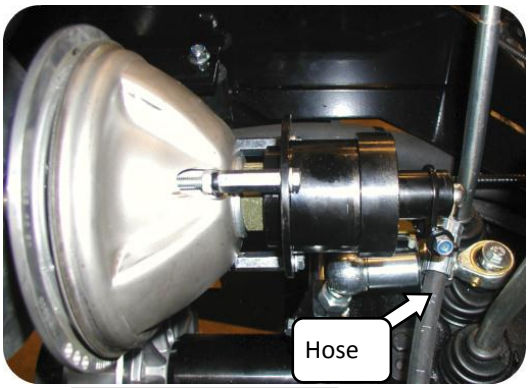
Changing the variator belt is done without using any tools, in order to avoid damaging the variator discs.
Never bend or break the belt more than necessary.
When fitting a new belt, it must first be run in, in order to provide an optimal use-surface and subsequent longer lifespan.

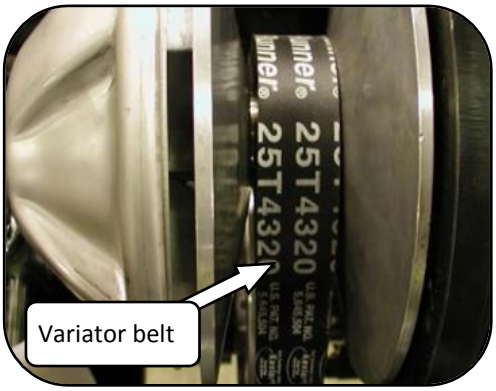
Check:

- Remove the variator cap in the cab.
- That the variator discs and band are clean and free of grease and oil. Clean when necessary.
- Wear of the belt. Change when necessary.
- Belt in respect of crack formation. Change when necessary.

Change:

- Remove the belly guard and the variator cap in the cab.
- Put into a high gear.
- Remove the hose.
- Turn/pull apart the discs on the secondary variator. (The lower of the two variators).
- Pull off the old variator belt.
- Fit the new variator belt.
- Refit the hose, variator cap and belly plates.





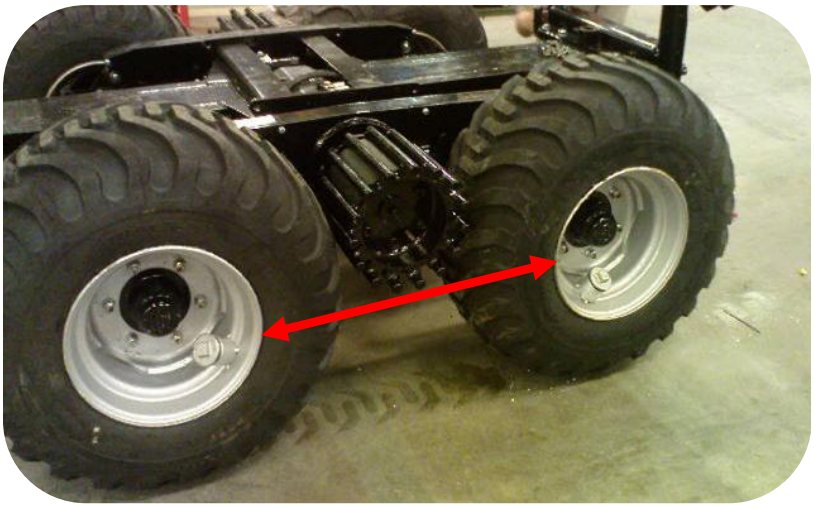
9 Tyres

9.1 Air pressure

Check:

- Cab section: 200kPa (2bar)
- Trailer section: 400kPa (4bar)

9.2 Wheel jamming pressure



The wheel's jamming pressure should be such that the roller does not skid towards the wheel, except if there is an extreme load or very slippery, e.g. wet snow or muddy. The base value is 655 mm between the inside of the highest corner of the rims. If the roller slips, the pressure must be increased with the adjusting screws; higher pressure than necessary should be avoided as it can cause the machine to roll more heavily.

10 Battery

10.1 General

Battery acid is very corrosive.

Never short-circuit the battery poles. Risk of explosion.

Use protective clothing and eye protection when working with batteries and battery acid.
If battery acid gets onto skin or clothes, flush with water immediately.

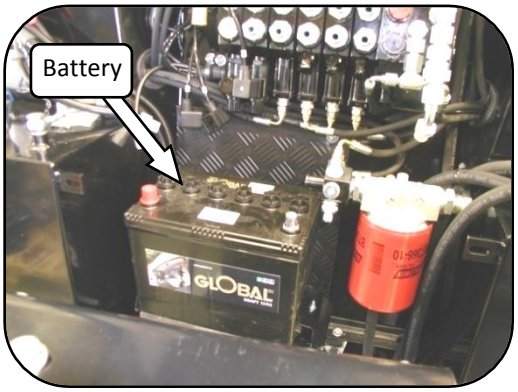
Do not disturb the battery cable shoes when the engine is running.

Check:

- Battery fixing.
- Acid level in the battery. Fill with distilled water as required.
- That the poles and cable shoes are adequately protected.
- That the battery poles have not oxidised. Clean when necessary. Use contact grease on the poles.

10.2 Charging

- Stopping the main circuit breaker.
- Remove the cable shoe on the minus pole and then on the plus pole.
- Connect the charging equipment according to the battery charger's manual.
- Refit in the reverse order. Use contact grease on the poles.



10.3 Battery change

- Stopping the main circuit breaker.
- Remove the cable shoe on the minus pole and then on the plus pole.
- Fit new batteries.
- Refit in the reverse order. Use contact grease on the poles.

11 Hydraulics

11.1 General

Check daily:

- That there are no leaks in the system. Clean when necessary.
- That there are no damaged/broken hoses or connections. Change when necessary.

12 Safety equipment

12.1 Fire extinguisher

Check daily:

- Best before date.
- Pressure in the fire extinguisher. The extinguisher's manometer must be within the green markings.

12.2 Safety belt

A safety belt is an additional option.

Check daily:

- That the belt locks, by pulling abruptly on it.
- That there is no damage to the belt.

13 Diesel heater

The diesel heater is an additional option.

13.1 General

Check daily, when in use:

- That the parts surrounding the heater are clean and well-ventilated. Risk of fire! Clean when necessary.

Maintenance schedule

1. Lubrication points	1st service	25 hrs	50 hrs	100 hrs	250 hrs	500 hrs	1000 hrs / Annually	Separate manual
1.1 Braking mechanism	X			x				
1.2 Centre link	X	x						
1.3 Stabilisation cylinder	X		X					
1.4 Control cylinder	X	x						
1.5 Transmission shaft	X		X					
1.6 Drive roller mechanism	X	X		x				
1.7 Wheel bearings, trailer section	X		X					
1.8 Rotator and link	X		X					
1.9 Grip	X		X					
1.10 Crane								X
1.11 Break link	X			X				
2. Bolt joint								
2.1 Wheels, cab section	X					X		
2.2 Wheels, trailer section	X					X		
2.3 Crane foot	X				x	X		
2.4 Centre link	X				X	x		
2.5 Rear section gearbox	X				X	x		
2.6 Drive shaft							x	
2.7 Trailer section	x						x	
2.8 Shaft locking	X						x	
2.9 Drive roller	x					X		
2.10 Engine mounting							X	
2.11 Variator	X						X	
3. Engine *N.B. See separate manual for complete service schedule!*								
3.1 V belt	x				X			
3.2 Hoses							X	

	1st service	25 hrs	50 hrs	100 hrs	250 hrs	500 hrs	1000 hrs / Annually	Separate manual
5. Oils								
5.1 Engine oil	X			X				
5.2 Hydraulic oil	*See chapter 5.2*							
5.3 Gearbox oil	X						X	
5.4 Corner axle oil, trailer section							X	
5.5 Planetary gear housing oil							X	
6. Filter								
6.1 Engine oil filter	X			X				
6.2 Hydraulic oil filter	X					X		
6.3 Diesel filter						X		
6.4 Air filter					X			
6.5 Cab filter					X			
6.6 Cooler filter					X			
7. Brakes								
7.1 Driving brake	X							
7.2 Parking brake	X							
7.3 Service brake	x					x		
8. Variator								
8.2 Variator belt	X					x		
9. Tyres								
9.1 Air pressure	X					x		
9.2 Wheel jamming pressure	X							
10. Tyres								
10.1 Air pressure	X						x	
13. Diesel heater								
13.1 General								X